

# TRANSBOUNDARY DIAGNOSTIC ANALYSIS FOR THE LAKE BAIKAL BASIN

PRINCIPLES AND PROCESSES FOR THE DEVELOPMENT OF A  
TRANSBOUNDARY DIAGNOSTIC ANALYSIS (TDA)  
AND STRATEGIC ACTION PROGRAMME (SAP)



**- WORKSHOP BACKGROUND DOCUMENT -**

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## **CONTENTS**

|   |   |
|---|---|
| 1. Objectives of TDA and SAP                              | 3 |
| 2. Framework and Processes for Preparation of TDA and SAP | 5 |
| 3. Monitoring and Evaluation of SAP Interventions         | 6 |
| 4. Sources  | 7 |

## **ABBREVIATIONS AND ACRONYMS**

|          |  |
|----------|--|
| APR      | Annual Project Review  |
| CCA      | Causal Chain Analysis  |
| EA       | Ecosystem Approach   |
| EcoQO    | Ecosystem Quality Objective                                      |
| GA       | Governance Analysis  |
| GEF      | Global Environment Facility                                      |
| IMC      | Inter-ministerial Council  |
| IW:LEARN | GEF International Waters learning and knowledge exchange network |
| M&E      | Monitoring and Evaluation  |
| NAP      | National Action Plan   |
| PIR      | Project Implementation Report                                    |
| POPs     | Persistent Organic Pollutants                                    |
| SAP      | Strategic Action Programme                                       |
| SMART    | Specific, Measurable, Realistic, and Time-bound                  |
| TDA      | Transboundary Diagnostic Analysis                                |
| UNDP     | United Nations Development Programme                             |
| UNOPS    | United Nations Office for Project Services                       |

## 1. OBJECTIVES OF TDA AND SAP

The Global Environment Facility (GEF) recommends that international waters projects develop both a Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP). The TDA is a non-negotiated document that provides the factual basis for the formulation of a SAP. The objective of the TDA is to provide a scientific and technical analysis on the status and impacts of the environment. The SAP has two main objectives: Firstly to identify policy options and associated governance mechanisms in addressing priority transboundary issues, and secondly to formulate appropriate mechanisms to implement priority interventions.

*The technical role of the TDA is to:*

- Identify, quantify, and set priorities for environmental issues which are transboundary in nature
- Identify the immediate and root causes of these priority environmental issues
- Identify specific practices, sources, locations, and sectors of human activity associated with these priority environmental issues and from which environmental degradation arises or threatens to arise.

*The TDA can only be an effective tool if it:*

- Sets appropriate boundaries
- Identifies and analyses all relevant stakeholders
- Conducts studies by joint fact-finding
- Includes an appropriate balance of disciplines
- Identifies the socioeconomic causes of the transboundary problems
- Evaluates the institutional capacity
- Makes all the information available to the stakeholders in a concise and clear manner

The TDA is an element of an adaptive management strategy that enables the identification of transboundary issues and their causes. It is not intended as a static document. Instead, the TDA will need to be updated with periodic reports as new information about the status of the transboundary basin emerges.

The SAP is a negotiated policy document that is endorsed at the highest levels of all relevant sectors. The SAP should address the transboundary issues that are identified in the associated TDA. The SAP should establish clear priorities for action relating to reforms in policy, legal, institution or investments. Furthermore, the SAP should enable the achievement of agreed regional objectives through specific national actions.

The SAP should facilitate the identification, reinforcement, or establishment of institutions that are necessary for effective regional coordination. Care must be taken to maintain political momentum such as development of the Inter-ministerial Councils (IMC's) at a national level to avoid capture of the project by a particular sector. Adoption of the SAP should subsequently lead to the development of National Action Plans (NAP's)

*Each SAP should incorporate:*

- A well-defined baseline, which enables a clear distinction between actions with national benefits and those addressing transboundary concerns with global benefits
- Agreement on regional objectives through specific national actions, defined in space and time and congruent with TDA

- Integration of social issues with measures that would maximize economic yield, environmental benefits, and social benefits
- Development of institutional mechanisms at the regional and national levels for implementation
- Detailed information on operationalization of regional objectives through deployment of human capacity, infrastructure, legal and policy reforms, finance, and investments
- Regional and national arrangements for monitoring the overall environmental status and trends
- Identification of incremental processes, benefits, and costs
- Monitoring and evaluation (M&E) procedures to measure effectiveness on the outcomes of the implementation of the SAP itself
- A process for periodically revising the short-term goals and the overall region-wide objectives, and each revision should be endorsed at a high level.

**Table 1:** Comparison of main issues between Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP)

| <b>Transboundary Basin Subject</b>   | <b>TDA</b>  | <b>SAP</b>  |
|--|---|---|
| Environmental challenges <ul style="list-style-type: none"> <li>• Pollution</li> <li>• Unsustainable fisheries</li> <li>• Habitat degradation</li> <li>• Invasive species</li> <li>• Climate change</li> </ul> | Transboundary issue, identify threats and root causes             | Regional and national reforms to implement interventions in order to address environmental challenges                     |
| Socioeconomic situation  | Socioeconomic impact analysis, including prioritisation of issues | Economic instruments, investments, fundraising, etc. as tools for SAP implementation                                      |
| Governance status  | Governance analysis, Stakeholder analysis                         | Legal, policy and institutional reforms; ministerial adoption, stakeholder involvement (private sector and civil society) |

It is of key importance that in the process of developing the TDA and SAP there is full stakeholder participation and joint fact-finding as well as transparency.

*Both the TDA and the SAP should incorporate the following principles:*

- Ecosystem approach (EA)<sup>1</sup>

The ecosystem approach is one of the most important principles of sustainable environmental management. It is a strategy for integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems. The ecosystem approach applies appropriate scientific methodologies in order to encompass the essential processes, functions and interactions among organisms and their environment.
- Adaptive management and accountability
- Inter-sectoral policy development and step-wise consensus building
- Risk management
- Inclusion of partnerships and incremental costs
- Aligned actions and government commitment

<sup>1</sup> The ecosystem is based on 12 principles: <http://www.cbd.int/ecosystem/principles.shtml>

## 2. FRAMEWORK AND PROCESSES FOR PREPARATION OF TDA AND SAP

Transboundary Diagnostic Analyses require a detailed analysis of the existing environmental issues in the focal water basin. Each of these issues is analysed and prioritized, and its relative severity is evaluated. Furthermore, the impacts of the environmental issues are assessed, possible causes identified and, as far as possible, quantified or qualitatively justified. In addition, the national and transboundary contributions should be identified for each environmental issue.

The priority transboundary environmental issues are subject to the process of causal chain analysis (CCA) to determine their root causes, immediate and intermediate causes as well as sectoral activities associated with the root causes.

The main purpose of CCA is to identify the most important root causes of each of this priority problems in order to target them by appropriate policy measures and interventions for remediation or mitigation. Furthermore, the CCA is an important basis for the design of the practical actions that will be included in the SAP.

*Components of a Causal Chain Analysis include:*

- Priority transboundary environmental problems or issues  
Environmental issues as identified from the studies and evaluations conducted during the TDA process are prioritised before the CCA
- Immediate causes  
Physical, biological or chemical variables that have a direct impact on a priority environmental issue
- Root causes  
Key factors, trends, processes or institutions that: (a) influence a situation, issue, or decision; and (b) propel the system forward, and determine the outcome of a scenario

Institutional mapping and stakeholder analyses should be an integral component of the TDA. The governance analysis (GA) is an important aspect of the TDA that identifies all the socio-economic, legal, administrative, and political contexts or constraints (governance analysis) relevant for the integrated resource management of the transboundary water basin.

*Governance Analysis should include:*

- Stakeholder analysis to verify interests of groups and individuals and assemble information on affected populations
- Institutional analysis to understand the formal and informal mechanisms of actual decision-making
- Legal and policy analysis to provide the bases for recommending legal and policy reforms

The preparation of a TDA can take place in a number of ways depending on the specific local situation, but it should always involve both national as well as regional joint-fact finding initiatives. Technical task teams should be formulated in order to collect data and information at the national level. It is important that there is an appropriate balance of all the relevant disciplines in the technical task teams.

Open consultative meetings need to be convened with wide stakeholder audiences, in order to present and obtain feedback at the national and regional levels. National TDA reports, and/or specific technical reports can be used as key reference documents for preparation of the regional TDA.

After the draft regional TDA has been discussed, revised and adopted in by technical experts, the document should be tabled for review and adoption during an intergovernmental meeting.

The development of a Strategic Action Programme (SAP) starts with a review of the priority transboundary issues, and their immediate and root causes that have been identified in the TDA. These are used for the formulation of ecosystem quality objectives (EcoQOs), indicators for monitoring and evaluation, as well as targets to define strategic program actions for mitigating the environmental problems. Specific, quantifiable and time-constrained targets are then set for achieving the EcoQOs. Subsequently, specific interventions are developed to realise the EcoQOs within the time frame designated.

Mechanisms for implementation of the SAP should include assessment and establishment of: i) legal and institutional arrangements; ii) stakeholder and public participation plan; iii) funding and investment arrangements; and (iv) monitoring and evaluation approach.

### **3. MONITORING AND EVALUATION OF SAP INTERVENTIONS**

Monitoring and evaluation (M&E) of progress is a crucial component of successful adaptive, results-based management, and forms an integrated part of all GEF International Waters projects. Baseline data collected during the TDA provides the basis of the M&E framework for measuring the effectiveness of SAP interventions.

During the development of the SAP, a logical framework (logframe) will be developed for the implementation of interventions. The indicators that were developed on the basis of data collected during the TDA and evaluated as part of the SAP will subsequently form the basis of further M&E activities as part of project implementation. This includes the Annual Project Review (APR) and Project Implementation Report (PIR) as well as project Midterm and Final Evaluations that are obligatory for all GEF financed projects.

All M&E frameworks should include indicators that are Specific, Measurable, Realistic, and Time-bound (SMART).

*Indicators for transboundary water basin interventions can fall into several categories:*

- **Process Indicators**

Measurements of institutional and political changes in integrated water management processes:

- Establishment of interministerial committees
- Completion of TDA establishing priorities, identifies root causes and is endorsed by the involved countries
- Completion of SAP containing national and regional policy, legal, and institutional reforms and priority investments to address priority transboundary issues
- Adoption of a harmonized M&E framework, establishing process indicators, stress reduction indicators, environmental status indicators and socio-economic indicators
- Adoption of a joint legal/institutional framework
- National adoption of policy/legal reforms in key sectors
- National ratification of regional or global conventions and protocols pertinent to the TDA and SAP
- Country commitments to report progress in achieving reduction in environmental stressors, and improvement of environmental and socioeconomic status

- **Stress Indicators**

Measurements of changes in environmental stressors:

- Parameters relevant to point or non-point source pollution (e.g. kilo pollutants per year)
  - Erosion or sedimentation parameters
  - Area covered with forest/agroforestry species/other vegetation aimed at reducing environmental stressors
  - Amount of catchment or aquatic area placed into protected management (including the establishment of no fishing zones)
  - Amount of fishing pressures reduced (e.g. reduced number of boats)
  - Numbers of fishermen using larger mesh sizes or other measures aimed at reducing fishing pressure
- **Environmental Status Indicators**  
 Measurements of results of integrated water basin management interventions:
    - Improvement in trophic status of a specific terrestrial or aquatic ecosystem
    - Changes in measurable ecological or biological indices (e.g. Water Quality Index)
    - Improved flow regimes (e.g. hydrological parameters, incl. parameters related to groundwater use and catchment area protection)
    - Ecological parameters (e.g. age classes of fish, improved recruitment classes of targeted fish species, improved aquatic species diversity)
    - Reduction of POPs throughout the food chain
  - **Socioeconomic Indicators**  
 Measurements of changes in the socioeconomic status of human populations in the catchment basin:
    - Increased stakeholder awareness and documented stakeholder involvement
    - Local income status
    - Increases in sustainable livelihood generation opportunities
    - Increased use of sustainable energy alternatives by households and industries
    - Social conditions

### 3. SOURCES

IW:LEARN training course on TDA-SAP approach: <http://iwlearn.net/publications/courses>

Duda, A. (2002) Monitoring and Evaluation Indicators for GEF International Waters Projects. [http://iwlearn.net/publications/misc/duda\\_indicator.pdf/view](http://iwlearn.net/publications/misc/duda_indicator.pdf/view)

Teng, S-K (2006) Practitioner Guidelines for Preparation of Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP) in East Asian Seas Region. Southeast Asia Regional Learning Center (SEA-RLC)/Southeast Asia START Regional Center (SEA START RC) Consultancy Report, 65 pp.